DOCUMENT RESUME

ED 282 583 IR 051 951

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TITLE IFLA General Conference, 1985. Collection and Services Division. Section: Interlending and Document Delivery. The Online System of Union Catalogues and Interlibrary Loan ('NCC/IBL') in the Netherlands.
INSTITUTION International Federation of Library Associations, The Hague (Netherlands).
PUB DATE 85
NOTE 15p.; Paper presented at the International Federation of Library Associations (IFLA) General Conference (51st, Chicago, IL, August 18-24, 1985).
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Developed Nations; Foreign Countries; Information Systems; *Interlibrary Loans; International Organizations; Library Associations; *Library Automation; Library Cooperation; Library Networks; *Online Systems; *Shared Library Resources; Systems Development; *Union Catalogs
IDENTIFIERS International Federation of Library Associations; *Netherlands; Project Integrated Catalogue Automation

ABSTRACT

This paper describes the interlending system in the Netherlands and examines the country's union catalogs, the main instrument in the interlending procedure. An overview of the integrated interlending system is provided; the union catalogs of the Royal Library in The Hague, the Technical University Library at Delft, and the library of the Agricultural University at Wageningen are described; and the establishment of the NCC/IBL (Nederlandse Centrale Catalogus van Boeken, Periodieken en Congressen/Interbibliothecair leenverkeer) online union catalog system is discussed. In addition, a description of the development of online library automation in the Netherlands includes the establishment and growth of the library consortium PICA (Project for Integrated Catalogue Automation), the adoption of the Canadian database management system Minisis by the library of the Agricultural University at Wageningen, and the development of PICA "process-systems" for local library use. Finally, the development of the NCC/IBL system is traced from the establishment of a miniformat for titles and the development of software through the current operation of the system, including procedures for loan requests, the implementation of the system for periodicals, and plans for the implementation of the system for monographs. A seven-item bibliography is provided. (KM)

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IFLA GENERAL CONFERENCE CHICAGO 1985

Division: Collection and Services

Section: Interlending and Document Delivery

ED282583

The Online System of Union Catalogues and Interlibrary Loan ('NCC/IBL') in the Netherlands

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Keyword(s):
Interlending;
Online automation;
Netherlands

IR051951

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THE ONLINE SYSTEM OF UNION CATALOGUES AND INTERLIBRARY LOAN ('NCC/IBL') IN THE NETHERLANDS *)

1. The interlending system in the Netherlands

The interlending system in the Netherlands has always been a rather liberal one. On a basis of voluntary co-operation all types of libraries are involved in it. Every library may send loan requests to every other library in the country. Other institutions and even private persons are allowed to apply directly - by mail, telex or telephone - to any library they want. Nevertheless private persons are encouraged to use a local library - generally a public library - as an entrance into the circuit(s). Libraries and other institutions are expected to send their requests first to one of the union catalogues. Private persons may do so as well. Only in case it reasonably can be expected that a request will be fullfilled by a specialized library, it is advisable, and as a rule it is done in practice, to apply directly to such a library. Interlending in the Netherlands is not charged.

Union catalogues are a main instrument in interlending in the Netherlands. The most important ones are the union catalogues, maintained by the Royal Library in The Hague - the Dutch national library, at least to a certain extent -, and the union catalogue of technical libraries of the Technical University Library at Delft.This library functions partly as a national library for technical literature and as such is sponsored by the ministry of Education. They are recently joined by an automated catalogue system (Agralin) of the Library of the Agricultural University at Wageningen, - the national agricultural library -, in which other agricultural libraries participate in a joint venture.

For a long time the Royal Library has maintained three union catalogues: a union catalogue of books ('Centrale Catalogus' - CC), a union catalogue of periodicals and serials ('Centrale Catalogus van Periodieken en Seriewerken in Nederlandse Bibliotheken' - CCP) and a union catalogue of congress publications ('Centrale Catalogus van Congressen'- CCC). Entries are by author or title in CC and CCP, by subject heading in CCC. The CC contains ab.6.000.000 titles with approx. 24.000.000 holdings of 86 libraries (research, special and large public libraries). As a result of the automation of book-

*) Partly this paper is an updated version of a paper, Interlibrary lending in the Netherlands, which I presented to the Seminar on Interlibrary Lending in Western Europe in Boston Spa (UK), 26-28 september 1983.

processing in Dutch libraries, the CC card catalogue was closed recently, an exception being made for certain titles. The CCP has been automated since long. It was published in bookform: Centrale Catalogus van Periodieken en Seriewerken in Nederlandse Bibliotheken. The latest, complete edition, which will also be the last, was published by the Royal Library in March 1983 in 14 vols, containing 200,000 titles (this number including cross references and alternative titles) with approx. 800,000 holdings of 225 libraries. The CCC is a card catalogue, containing more than 90,000 titles with approx. 275,000 holdings of 225 libraries. Automation of the CCC has yet to start.

The union catalogue of technical libraries ('Centrale Technische Catalogus' - CTC), maintained by the library of the Delft Technical University, contains more than 600,000 holdings of 160 libraries. The titles of periodicals in de CTC have been automated and were currently published in book form (26,000 titels with 90,000 holdings).

The in the near future wholly automated union catalogue of agricultural libraries ('Centrale Landbouw Catalogus' - CLC), maintained by the Library of the Agricultural University at Wageningen, contains more than 375,000 titles with approx. 750,000 holdings. The titles of the periodicals in the CLC (18,000 titles) have all been automated.

To some extent the union catalogues of the three libraries are overlapping, as some libraries were participating in more than one union catalogue (e.g. the central libraries of the technical universities and the central library of the Agricultural University were also participating in the union catalogues of the Royal Library). For titles to be added recently an end has been put to this duplication.

Although the interlending system in the Netherlands is an integrated system, in which all types of libraries participate and co-operate, there are several circuits (or in some cases rather sub-circuits). Most important of these is the public library structure for interlending. It is basically a regional system with two components in each region, a 'Provinciale Bibliotheekcentrale' (PBC) - a service center in each province, mainly for the small public libraries -, which a.o. maintains a core collection for interlending, and a 'Regionale Steunbibliotheek' (RSB) -a 'Regional Support Library', a library function, which has developed since the late sixties. The libraries with 'RSB'-function are participating in the union catalogues

of the Royal Library. Part of the public library system is also the 'Landelijke Bibliotheekcentrale' (LBC = 'National Library Center'), which is a library collecting a.o. research literature in the Dutch language, for which there is some demand in public libraries. The LBC is also participating in the union catalogues of the Royal Library.

For scientific literature the main burden of interlending is borne by the Royal Library and the 13 university libraries and - for literature in the field of medicine and biology - the library of the 'Koninklijke Nederlandse Academie van Wetenschappen' (Royal Dutch Academy of Sciences), a kind of national library for medicine and biology. Some special libraries, particularly some libraries of government departments, play a significant role in inderlending. More or less these government libraries have a circuit of their own.

The partly overlapping circuits (and subcircuits) on the level of research and special libraries are mainly centered around the union catalogues, maintained by the Royal Library, the Library at Delft and the Agricultural Library at Wageningen. Among them the circuits around subs. the union catalogues of the Royal Library and the Delft union catalogue are the most important. Both of them handle an equal number of loan requests. The Delft circuit serves mainly the industrial libraries and libraries of technical research institutions. The Wageningen circuit of course consists of all kinds of agricultural libraries.

Accurate overall figures on interlending are not available. Some years ago in a report of the Library Council on interlibrary lending in the Netherlands the number of loanrequests, sent to libraries, was estimated as being more than 700,000. It is not likely, that this figure has changed very much. Statistics of the above mentioned union catalogues indicate, that yearly approx. 450,000 requests were handled by the departments of the union catalogues (more than 200,000 by The Hague and Delft each).

Everywhere online library automation has or will have an increasing impact on interlending. In some countries online facilities have already been developed (e.g. in the USA by OCLC and by RLG (RLIN), in France the online Catalogue Collectif National Informatrice des Publications en Serie (CCN) developed under the responsibility of DBMIST).

In the Netherlands the keepers of the union catalogues in The Hague, Delft and Wageningen realised, that in a country of the size of the Netherlands the challenge, presented by this new development, in an adequate way only could be met by a close co-operation. In 1980 they decided to set up jointly an online union catalogue, the 'Nederlandse Centrale Catalogus van Boeken, Periodieken en Congressen' (NCC = Dutch Union Catalogue of Books, Periodicals and Congresses). The NCC is combined with an online system for handling interlibrary loan requests ('Interbibliothecair leenverkeer' - IBL) in the so called 'NCC/IBL'system. The automated system is developed by PICA. By contract a co-operative organization ('NCC-samenwerkingsverband') was founded - formally in 1984 - for managing the 'NCC/IBL'system. The NCC board consists of the three librarians of the libraries involved and two other members, appointed by co-optation (presently a university librarian and a director of a public library). The director of PICA is an advisory member of the NCC-board. A committee of user-libraries is regularly consulted.

For a clear understanding of the 'NCC/IBL'system first a picture of the development of online library automation in the Netherlands has to be presented.

2. Online library automation in the Netherlands

Undoubtedly the most important online library automation system (or rather systems) in the Netherlands has been developed by PICA.After a rather long preparatory fase, in 1977 a consortium of the Royal Library and 6 university libraries, forming together the co-operative organization PICA (= Project for Integrated Catalogue Automation), started with an online cataloguing system, based on the principles of shared cataloguing and extracting titles from a common database. The cataloguing system was more or less modelled after the OCLC system in the USA. The database was currently fed, first only with tapes of BNB and later also with LC Marc tapes and tapes of 'Brinkman's Catalogus', the Dutch national bibliography, which in March 1982 was connected directly to the PICA cataloguing system. Since then cataloguing for the Dutch national bibliography - with some special facilities in the form of some separate authority files for the national bibliography - is done online, using the same database and on the basis of shared cataloguing with other libraries (of course, the cataloguing of titles for the national bibliography

is done for more than 95% by the Royal Library). In 1978 the Royal Library acquired for use in PICA a selection of approx. 500.000 titles from the OCLC database, at the moment of selection consisting of ab. 3.000.000 titles. The format, used by PICA, is a Marc-like format. PICA used for the cataloguing system a PDP 11/70 with another 11/70 as back up. The PICA bureau together with the computersystem is housed in the Royal Library. In the summer of 1985 the PDP 11/70 was replaced by TANDEM nonstop hardware.

In 1977 PICA had a rather modest start, but soon it got impetus. It was strongly supported by the Ministry of Education. Since 1979 it developes its own software and it runs itself the computer system. In 1981 a second version of the cataloguing system was implemented (PICA II). The internal PICA format was enlarged, such as to be able to encompass, besides the original PICA-format, the other MARC-formatsas LC Marc, BNB Marc and Intermarc. The staff of the PICA bureau numbers at this moment ab. 45. Participation in the cataloguing system grew. At this moment 7 out of 13 university libraries do all the cataloguing of their current acquisitions using the PICA database (2 of them use it for part of the current cataloguing and do uptill now most of the cataloguing on their own online system).

Presently 11 of the 13 libraries with'RSB'- function in the public library network participate in the PICA cataloguing system. The 'Landelijke Bibliotheekcentrale' (LBC) also does its cataloguing on PICA. Also NBLC, the central organization of public libraries, which maintains a cataloguing service for public libraries, became one of the participants. Some special libraries also use the PICA cataloguing system. Presently some 35 libraries and other institutions have joined the system (the Royal Library uses the system for 5 different departments with different usernumbers: the research collections, the national bibliography, the union catalogues of books and periodicals, the STCN project (Short Title Catalogue Netherlands, 17th and 18th century). At this moment the database consists of approx. 2.500.000 titles, with approx. 1.800.000 holdings. Most of the off-line products (catalogue-card service, printed lists in form of Digiset-, laserprint- or computerprint output, COM-fiches) are made by a private firm.

The Library of the Agricultural University at Wageningen in co-operation with the Ministry of Agriculture has adopted the Canadian database management system Minisis and built its own total library system Agralin. The Library of the Technical University at Delft has chosen for the wellknown DOBIS-LIBIS system, but is only just starting with the implementation of it. To be mentioned further are the adoption of the GEAC system by the university library at Utrecht and the development by the University of Amsterdam of its own system. Both also have a cataloguing relation with PICA, but, as already indicated, still do most of the current cataloguing on their own system. The Technical University at Eindhoven has adopted VUBIS, the total library system of the Dutch language Free University at Brussels (Belgium).

Besides the cataloguing system PICA developed 'process-systems' for local use, to be implemented separately by libraries on their own minicomputer (PDP 11/44).'Process-systems', thus far developed, are an online acquisitions system, which can also be used on the central computer of the PICA cataloguing system, an online stock management and circulation control system and a system for an online public catalogue. The latter was in 1984 and 1985 during half a year extensively tested in two libraries. In the near future it will be connected to the PICA circulation system in a library. Only part of the libraries, participating in the PICA-cataloguing system, use PICA-'process-systems'. In public libraries ALS and GEAC are much used. PICA has also developed plans for hosting documentary databases providing facilities for online retrieval and also to produce special bibliographies.

Automatically the PICA-database became a union catalogue of holdings of participating libraries. Soon it was clear, that this PICA-union catalogue roughly would correspond with the circuit of the research libraries in the union catalogues in The Hague (with the exception of the libraries of the technical universities and of the agricultural university, which however, as already described, form circuits of their own) and the circuit of the upper strata of the public library system.

In an early stage the Royal Library and PICA envisaged the use of the PICA-cataloguing system for the production of the union catalogues of the Royal Library. The best solution seemed

to be to close the card-catalogues and connect the department of union catalogues of the Royal Library with the PICA-cataloguing system. Thus the department of union catalogues would more or less function as a separate PICA library. It would add to titles, found in the database, the holdings of non-automated libraries. Of a small percentage of titles short, low graded catalogue-entries would be entered into the PICA database. Titles of libraries with their own automated cataloguing system would be received on tape and added in an offline procedure. The adding of holdings has been fully implemented since 1981. For the department of union catalogues a special online facility, enabling to add quickly a library holding to a title in the database, was created. Thus far lack of manpower prevented the cataloguing of titles, not found in the database. Neither have titles on tape been entered up till now, as - among some other reasons - in the offline procedure of matching and merging titles the redressing of errors seems to be rather time-consuming. Part of the loanrequests for monographs is also searched by the department in the database of the PICA-cataloguing system (in 1984 ab. 40 - 50.000 out of a total of ab. 135.000 loanrequests for monographs). As already mentioned at the same time plans for the 'NCC/IBL'system were developed.

3. The online 'NCC/IBL'system

As a preliminary measure in 1980 a false problem concerning a controversy about 'long' and 'short' titles, a ghost, which in connection with catalogue automation had haunted the Dutch library world more than one decade, was definitively eliminated. An understanding was reached, in which the requirements of a so called miniformat for use in a national union catalogue were formulated.

As already mentioned, in 1980 the keepers of the union catalogues agreed upon the desirability of creating in a joint venture a national union catalogue of books, periodicals and congress publications, which could be consulted online by libraries, and to connect this union catalogue with an automated system of handling interlibrary loan requests. It was also agreed, that this NCC/IBL system should be developed by PICA and, in the PICA technical framework, be implemented on a separate minicomputer. The NCC/IBL database

would be fed with (short) titles with holdings from the databases of the cataloguing systems, used for resp. CC - CCP - CCC in The Hague, CTC in Delft and CLC in Wageningen. These were the 'production-systems' for creating and updating union catalogues, the NCC/IBL system would be the'user-system', in which titles from the production systems would be merged into one database. In this way the three libraries would keep the responsibility for continuing their own union catalogues. They would also be responsible, as in the past, for their own circuits in interlending. However, the overlapping of the different union catalogues would be eliminated. Since 1983 a library participates for its new acquisitions in only one of the union catalogues.

Specifications were laid down in a report, formulated by the PICA bureau under the guidance of a working committee of representatives of the three libraries and PICA. This report, Nationale Centrale Catalogus en Interbibliothecair Leenverkeer.'s-Gravenhage, 1980 (National Union Catalogue and Interlibrary Lending), was adopted and published in 1980 by the three libraries involved. It was approved by the Ministry of Education. In a hearing the plan was presented to the Dutch library world. It was received favourably. With the Ministry of Education an agreement was reached upon the financing of the 'NCC-IBL'system: central hardware (to start with a PDP 11/44) and the development of the software would be paid for by the Ministry of Education, the maintainance and technical managing of the system by the PICA-bureau would be financed by the keepers of the union catalogues and for the administrative costs the users would be charged (f 0,35 per search). During the first years the Ministry of Education would give a guarantee for payment of the administrative costs.

In 1981 the PICA-bureau started with the development of the software, in 1982 the NCC computer was installed and used for program development, from September 1982 onward the database was built up, using the miniformat. It was decided to start with periodicals and serials - more than 50% of the loanrequests - and as a first step to merge CCP, CTC-periodicals and CLC periodicals and serials. In a first round this was completed in April 1983. A first phase of the online system became operational at 2 May 1983. The result of the merging is a database, which in March 1985 contained 200.000

titles of periodicals and serials with more than 925.000 holdings. In May and June 1983 the three library-keepers of union catalogues started to implement the system. From July 1983 onward other libraries were connected to the system.

Originally it was envisaged to take the second step of adding the monographs to the system within a year. This has been postponed for several reasons. Firstly the full implementation and rounding off of the system for periodicals, as well as the redressing of some initial errors, however small they mostly were, required much care, secondly it soon became clear, that the capacity of the minicomputer was insufficient even for a start with monographs, which would be more modest than planned, thirdly it took some time to decide on an alternative. The alternative, upon which an agreement was reached, was to enlarge for NCC/IBL use the TANDEM computerconfiguration, which PICA installed in the beginning of 1985. It is not to be regretted, that the start with the monographs had to be postponed. Valuable experience has been gained with the system for periodicals, in the first place regarding the use of it made by the libraries, which will be of much help in the extension of the system with monographs.

With some exceptions the titles of periodicals and serials in the three union catalogues had all already been automated. Searching the NCC database gives nearly always an answer to the question, whether a periodical or serial can be obtained in Dutch libraries However, it is also possible to direct a request for a title, which is not to be found in the database, to the departments of union catalogues for searching in the card catalogues. If found there, holdings are added to this so called 'free request', which in the same way is distributed among libraries as requests for titles, found in the database. Especially for monographs this facility will be important.

The system distributes the loanrequests according to a distribution-algorithm in which the interlibrary lending working load of a library, the catagory of a library and the established (sub-)circuits in interlibrary loan form the variables. The relative importance of these variables can be changed daily by changing weighing factors belonging to each of the variables, in other words, the potential workload of a library can be increased or decreased day by day. The purpose was to achieve a better proportional distribution

of loanrequests among libraries. Requests for loans from libraries, not online accessible by the system, are sent to those libraries by mail, requests being printed by the system. Every library, participating in the union catalogues - also those libraries not yet having the intention to be connected directly to the NCC/IBL system - was asked how many requests it could handle daily.

Although the facility is only being implemented in practice recently, the possibility to form a (sub)circuit of libraries by region, by type or by some other criterium was developed as an integral part of the system. On their own request a group of libraries - libraries participating in the union catalogues as well as libraries, which are only users - may form a circuit. A request for a publication, which can be found within the circuit, will only be sent to libraries outside the circuit, if the item requested is not available (on loan etc.). After the implementation of the system, when only the algorithm of the interlibrary lending working load was applied, it soon became clear, that some well established routines among certain libraries, sending requests to eachother, were disturbed. These routines can be restored or new patterns may be established, if desirable. A regional code can be applied in order to ensure, that a request is sent first to a library in the neighbourhood (e.g. the same town).

A number of libraries - The Royal Library, the university libraries, the libraries with 'RSB'-function and some other libraries have an additional task of 'verdelende bibliotheek'('distributing library', a rather misleading term), i.e. the task of putting loan requests into the system on behalf of libraries, which do not (yet) possess a terminal, which can be used for the NCC/IBL system. A 'verdelende bibliotheek' also has the task to report to the system the (non)fulfillment of a request on behalf of a library in its region, which does not have a direct access to the system. As the number of libraries, using NCC/IBL directly, will increase, the task of 'verdelende bibliotheek' will diminish.

The head of the department of union catalogues of the Royal Library has been appointed as 'IBL-coördinator', with the special tasks of keeping close contact with participating libraries, solving day-to-day problems in interlibrary loan, strengthening the

co-operation of the union catalogues and promoting the system among not yet participating institutions.

It was the intention to lead all loanrequests , directed to the union catalogues, through the NCC/IBL system. At this moment the departments of the union catalogues put all loanrequests for periodicals and serials, sent to them by mail, into the system. Thanks to the increasing online use of the system by the libraries, the workload for the departments of the union catalogues was not too heavy. The union catalogues do not put loanrequests into the system, which should be handled e.g. by university libraries on behalf of departments within the university. A search action is charged with f 0,35 (however for a start these costs are subsidized by the Ministry of Education). The handling of a request (the 'IBL'part of the system) is not charged. It was estimated, that for a loanrequest an average of two searches would be needed. For periodicals in practice it was 1,77 in 1984. Libraries have also to pay for communication costs (PICA libraries being able to use the same communicationfacilities as for the cataloguing system).

The implementation of the system for periodicals has been a succes. Although there were some deficiencies, participating libraries are satisfied. A weak point is the reporting back to the system of the (non) fulfillment of a request. In 1984 138.383 loan-requests were put into the system. The number is still increasing considerably. In this context it should be noted, that a loanform, sent to a NCC library by post, is usually not put in the 'NCC/IBL' system, when the request can be fulfilled directly by the library itself. In April 1985 ab. 100 libraries and other institutions were directly connected to the system, either by dedicated line or by a dial up facility. Also the number of participants is steadily increasing. In future it probably will be possible to use a public packet-switching network for datacommunication. As the system can follow each request, the attitude of the different libraries in handling loanrequests becomes very clear.

For searching in the database of periodicals and serials there are different kinds of searchkeys: ISSN, CCP number, production number, a combination of keywords out of the title, corporate author. In a database of many millions of titles of monographs a keyword index will not be feasible. For monographs a 4-2-2-1 title key, combined

with an author key, and possibly vice versa (a more extended author key + short title key) will be implemented and indexed. Also a separate author-index is envisaged (and of course an ISBN-index).

It is planned, that the system for monographs will be in operation in the spring of 1986. As already mentioned it will be implemented on the PICA TANDEM computer, using the same database as the PICA cataloguing system, the titles being accessible through special NCC-indexes. For the time being the periodicals and serials will remain on the PDP 11/44.The user will approach both parts of the system through the PICA data communication network, without noticing, that the 'NCC/IBL' system has been loaded on two different computers.

In the first phase only the titles of the union catalogue for monographs of the Royal Library will be used (corresponding with the titles of monographs with holdings in the PICA cataloguing system, then more than 2.000.000 holdings of libraries). In the meantime problems of matching and merging of titles, delivered on tape by the other 'productionsystems', will be studied intensively. These problems willbe much trickier with monographs as it was the case with periodicals. It is possible, however, that the titles of the monographs of the CTC in the Delft Library,which as a whole yet have to be automated, will be added online to the PICA database (the hitrate being 70 - 80%).

In loading the titles of monographs, delivered on tape by different union catalogues, into the same computerconfiguration there are several options: a) a total matching and merging of titles (solving emerging problems by hand will be timeconsuming), b) only merging the titles, which automatically are matched clearly, and putting the residu in a separate file, c) no matching and merging, but having seperate files of union catalogues, available through common indexes. Decisions will be taken after some research.

After the full implementation of the 'NCC/IBL'system as designed now, some extension will possibly be given to the system along the following lines:

- making interfaces between the 'NCC/IBL' system and automated loan systems of individual libraries, as to make it possible to ascertain online,whether a publication is available; and probably in connection with this:

- making interfaces between regional public catalogues, especially in the public library sector and the 'NCC/IBL'system;
- connecting the 'NCC/IBL' system' to automated document delivery systems;
- making connections with similar networks in other countries, and in general international co-operation in this field;
- in the long run perhaps making the system available to private persons through videotext facilities;
- studying the possible impact in the future of networks of distributed databases on the 'NCC/IBL'system.

It is not unlikely, that there will grow a rather large discrepancy between the sophisticated facilities, created in the 'NCC/IBL' system, and the subsequent increase of the demand on the one hand and the actual possibilities to supply users with the requested items on the other hand. This might become the most serious problem in the future. It will certainly be a very serious challenge for the Dutch libraries and for the makers of library-policy in the Netherlands.

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